

CRUSTACEA FROM PRINCESS CHARLOTTE BAY, NORTH QUEENSLAND.
THE ISOPODA AND STOMATOPODA.

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(Contribution from the South Australian Museum.)

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Early in 1927 the writer, in company with Mr. N. B. Tindale, spent some weeks in Princess Charlotte Bay; although only a small portion of this time was occupied in marine collecting, a goodly number of Crustacea was obtained. Most of the marine material was secured on or near the Flinders Islands, a small group lying at the southern end of the bay. The "Alert" visited these islands in 1881, and since then other vessels also, but apparently little collecting has been undertaken there. A passage between Flinders and Stanley Islands—Owen Channel—has a bottom of mud and sand which harbours various dingy species, and this was systematically worked with a small dredge, while collecting was also carried out on *Halimeda* and other reefs, and amongst coral.

The present paper records the few species of Stomatopoda and Isopoda secured.

STOMATOPODA.

Family SQUILLIDAE.

It was found that an excellent method of obtaining Squillids from pools left at low tide was to introduce a small quantity of formalin. As the latter penetrated to the innermost crevices of the rock, or into burrows in the mud, the mantis-shrimps left their retreats and were easily captured with a small net. In some cases nearly an hour elapsed before all Squillids in a pool were ejected by the formalin.

The Walmbariya natives, living on Flinders Island, are well aware that these animals are capable of inflicting wounds with the spiny telson and raptorial dactylus, and on several occasions warned me that they should be handled with care.

GONODACTYLUS TRISPINOSUS Dana.

Gonodactylus trispinosus Dana, U.S. Expl. Exped., Crust., 1852, p. 623; Kemp, Mem. Ind. Mus., iv., 1913, p. 180 (and syn.); Balss, K. Sv. Vet. Handl., lxi., 1920, p. 5; Hansen, Siboga Exped., Leiden, Mon. xxxv., 1926, p. 35.

Protosquilla trispinosa Borradaile, Proc. Zool. Soc., 1898, p. 34, pl. v., figs. 1, 1A.

Taken from tunnels in stones dredged in Owen Channel, 3 faths. The examples agree well with the descriptions, excepting that the lateral margins of the last thoracic segment are subacutely rounded, and not broadly rounded as figured by Borradaile and mentioned by Kemp. The species was previously recorded from Australia:—Swan River, Western Australia (Miers), and North-West Australia (Pocock and Balss).

GONODACTYLUS GLABROUS Brooks.

Gonodactylus glabrous Brooks, Rep. Voy. "Challenger," xvi. (Stomatop.), 1886, p. 62, pl. xiv., fig. 5, and pl. xv., figs. 7-9; Kemp, Mem. Ind. Mus., iv., 1913, p. 167, pl. ix., fig. 113 (and syn.), and p. 170, fig. 2; Odhner, Goteborgs Kungl. Vet.-Och Vitt. Samh. Handl., xxvii., 1923, p. 8; Hansen, Siboga Exped., Leiden, Mon. xxxv., 1926, p. 29.

Dredged in Owen Channel, 3 faths., and in burrows in mud near shore at low tide.

GONODACTYLUS CHIRAGRA (Fabricius).

Squilla chiragra Fabr., Species Insect., i., 1781, p. 515, and Mantiss. Insect., i., 1787, p. 334.
Gonodactylus chiragra Kemp, Mem. Ind. Mus., iv., 1913, p. 153, pl. ix., fig. 10 (and syn.);
 Balss, K. Sv. Vet. Handl., lxi., 1920, p. 5; Odhner, Goteborgs Kungl. Vet.-Och Vitt.-Samh.
 Handl., xxvii., 1923, p. 8; Hansen, Siboga Exped., Leiden, Mon. xxxv., 1926, p. 24.

In holes in fragments of rock dredged in Owen Channel, 1 fath.; also both adults and young common in burrows in mud near shore.

GONODACTYLUS PULCHELLUS Miers.

Gonodactylus trispinosus, var. *pulchellus*, Miers, Ann. Mag. Nat. Hist., (5) v., 1880, p. 122.
Gonodactylus pulchellus Kemp, Mem. Ind. Mus., iv., 1913, p. 177, pl. x., fig. 117, 118
 (and syn.); Hansen, Siboga Exped., Leiden, Mon. xxxv., 1926, p. 33.

Dredged in Owen Channel, 3 faths. Apparently this pretty species has not been recorded previously from Australian waters.

PSEUDOSQUILLA CILIATA (Fabricius).

Squilla ciliata Fabr., Mantiss. Insect., i., 1787, p. 333.
Pseudosquilla ciliata Kemp, Mem. Ind. Mus., iv., 1913, p. 96 (and syn.); Hansen, Siboga
 Exped., Leiden, Mon. xxxv., 1926, p. 17.

A male and two females from burrows in mud near shore. Two of the specimens were mottled with brown and black during life, and one, an adult female with the fifth and sixth abdominal segments and telson abnormal, was coloured as follows:—Dorsum, dark bottle green; dactyli of raptorial legs, brown; remainder of all external appendages, pea-green with pink fringing hairs.

ISOPODA.

At the Flinders Islands, Isopods are poorly represented as regards number of species, although a few forms were abundant.

Family EURYDICIDAE.

EXCIROLANA ORIENTALIS (Dana).

Cirolana orientalis Dana, U.S. Expl. Exped., Crust., xiv., 1853, p. 773, pl. li., fig. 7.
Excirolana orientalis Hale, Trans. Roy. Soc., S. Austr., xlix., 1925, p. 156, fig. 14 (and refs.).

Common in the mangrove swamps, where I collected specimens by standing in the shallow water and picking the little carnivores off as they attacked my bare legs. The Walmbariya natives are sometimes annoyed by the attacks of this scalouse, which, however, they do not distinguish from *Hippa*, calling both "meljeri."

E. orientalis also burrows in sand at the margin of the sea, and the aboriginal children, aware of this habit, obtain both it and *Hippa* by scratching rapidly in the sand at the edge of the water, thus uncovering the buried crustaceans.

Family AEGIDAE.

ROCINELA ORIENTALIS Schioedte and Meinert.

Rocinela orientalis Sch. and Mein., Naturh. Tidsskr., (3) xii., 1879, p. 395, pl. xiii., figs. 1-2; Hale, Trans. Roy. Soc., S. Austr., xlix., 1925, p. 182, fig. 27 (and refs.).

Dredged amongst weed in Owen Channel, 3 faths.

Family SPHAEROMIDAE.

Mr. Baker identifies the few species secured as follows:—

EXOSPHAEROMA INTERMEDIA Baker.

Exosphaeroma intermedia Baker, Trans. Roy. Soc., S. Austr., i., 1926, p. 249, pl. xxxix., figs. 1-8.

Dredged amongst weed in Owen Channel, 3 faths. The type was from the Gulf of Carpentaria.

CYMODOCE PELSARTI Tattersall.

Cymodoce pelsarti Tatt., Journ. Linn. Soc., London, xxxv., 1922, p. 15, pl. ii., figs. 30-33, and pl. iii., fig. 36.

This species, which is common on mud near shore at Flinders Island, is very close to *C. longistylis* Miers.

CILICAEOPSIS WHITELEGGEI Stebbing.

Cilicaca whiteleggei Stebb., Ceylon Pearl Oyster Fish., Suppl. Rep., No. xxiii., 1905, p. 39, pl. ix. (A), (B).

On sandy bottom in Owen Channel, 2 faths.

Mr. Baker considers that this form is referable to *Cilicaeopsis*.

Family IDOTEIDAE.

Only a single species of the family was secured, but this proves to be a form of considerable interest, for which it is necessary to erect a new genus.

Lyidotea, n. gen.

Body narrow, not very depressed. First antennae with very short flagellum, and flagellum of second antennae composed of a single long joint. Maxillipeds with palp wide and composed of three joints; basipodite and epipodite large. Peraeon with first six free segments normal, but with last segment fused with pleon. Coxae of peraeopods not expanded into plates, all fused with their respective thoracic segments, but on second to fourth segments marked off from pleura by a shallow furrow. First peraeopod shorter than others, subchelate and with propodus swollen. Pleon composed of a single segment and with indications of three fused segments near base.

Type, *L. nodata*, n. sp.

The generic characters are described from the female alone. The salient features are the structure of the antennae and the coalescence of the last thoracic segment with the abdomen.

Lyidotea nodata, n. sp.

Adult female. Integument soft. Body slender, widest at third peraeon segment, and narrowest at posterior end of sixth; seven times longer than greatest width. Cephalon wider than long, with anterior margin concave and antero-lateral angles slightly produced; dorsum elevated posteriorly to form a pair of high united tubercles; eyes dorso-lateral, of moderate size. First antennae reaching to end of second article of second antennae; basal joint expanded, as wide as long, longer than the second and as long as the third article; flagellum less than half as long as last peduncular joint, flattened and furnished with sensory appendages. Second antennae thick, less than half as long as body; first joint very short but visible in dorsal view; second two-thirds as long as third, which is a little shorter than fourth and equal in length to fifth; third, fourth and fifth joints dilated apically; flagellum slightly longer than fourth peduncular article, unarticulate, and semi-cylindrical in shape, the outer face convex and the inner flattened; apex rounded (apparently with a minute terminal style). Outer lobe of first maxilla capped with ten spines, all but the innermost one being denticulate; slender inner lobe with two setose spines. Maxillipeds with basipodite shorter than epipodite; inner lobe reaching to middle of length of palp; first joint of palp short, the suture dividing it from second obscure; second joint a little longer than wide, and third suboval in shape. First four peraeon segments each with a pair of large dorsal elevations; fifth segment with a pair of obsolete tubercles, and sixth and seventh nearly smooth; first segment as long as, and barely wider than, cephalon; second, third and fourth segments subequal in length, each nearly twice as long as first, and wider than any of the others; sixth segment slightly shorter and narrower than fifth, which is shorter and narrower than fourth; seventh segment short, immovably fused with pleon, the suture most distinct laterally.

Peraeopods short and stout, the subchelate first much the shortest; the remaining six pairs are prehensile and subequal in length; coxae of second to fourth pairs barely visible in dorsal view. Lateral margins of pleon diverging posteriorly for three-fifths of length of pleon, then converging to the narrowly-rounded apex; pleon and last thoracic segment together as long as fourth, fifth and sixth peraeon

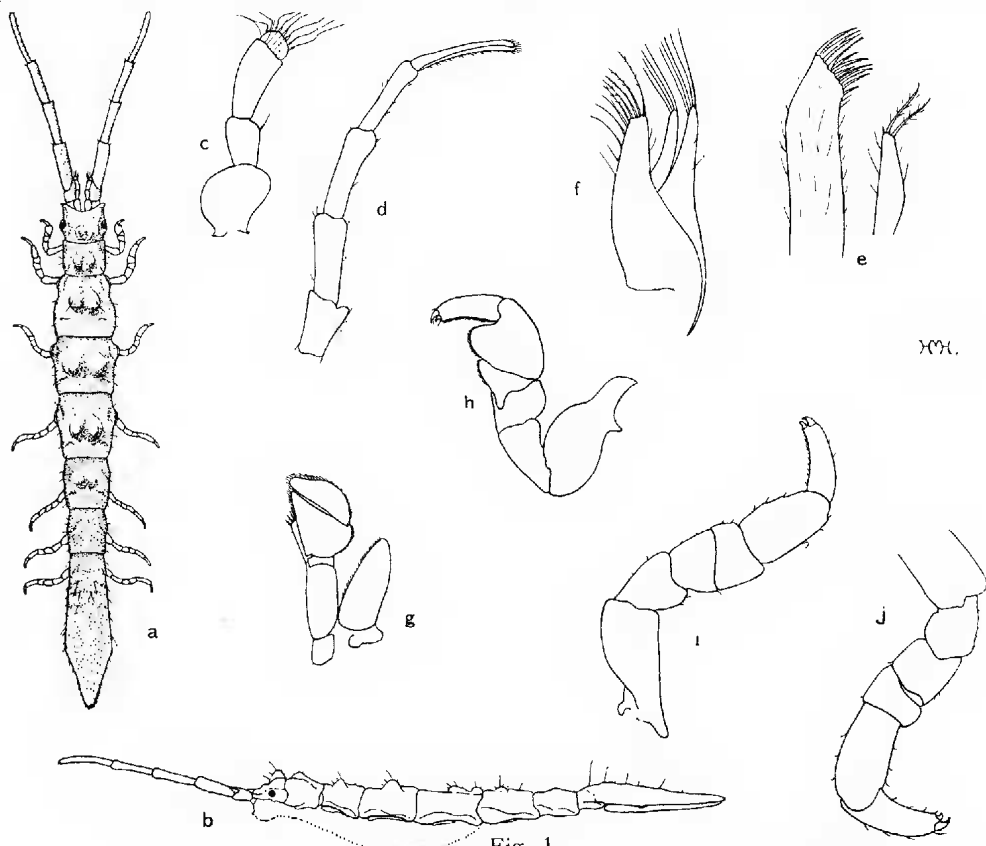


Fig. 1.

Lyidotea nodata, type female; a and b, dorsal and lateral views (x 8); c, first antenna (x 34); d, second antenna (x 13); e, first maxilla (x 100); f, second maxilla (x 100); g, maxilliped (x 34); h, i, and j, first, second and seventh pereopods (x 34).

segments together. Uropods narrow, with posterior margin truncate, a little sinuate; endopod subtriangular, apically rounded.

Colour.—White, with sparse dots of pigment, producing a dingy grey appearance.

Length, 8 mm.

Loc.—North Queensland: Flinders Island, Princess Charlotte Bay.

Type.—Female, in South Austr. Mus., Reg. No. C. 1699.

The adult female described above and several smaller specimens were dredged in two fathoms. In the younger examples the dorsal elevations of the cephalon and peraeon are not so well developed as in the type, the pleon is shorter, etc.; also, the flagellum of the second antennae is slightly clavate, and not flattened on the inner face, a feature which may be due to the preservative. The middle of the dorsal portion of the articulation between the head and first peraeon segment is somewhat obscure, suggesting partial fusion here also, but laterally this segment is distinctly separated from the cephalon.